

What is claimed is:

1. A patient controlled fluid medication security apparatus, comprising:
  - a) a reservoir for a fluid medication,
  - b) a pump operatively associated with said reservoir for pumping fluid from said reservoir on command,
  - c) a microphone for receiving voice sound from a voice source and converting it to an electrical signal representative of the voice pattern of the voice source,
  - d) a microprocessor programmable by an authorized operator to set and lock a dosage of medication regime for a patient, said microprocessor having associated digital memory storage and being in electrical communication with said microphone, said microprocessor having capability for receiving and analyzing an electrical signal from said microphone, to produce digital data representing a learned voice print of a voice source and for transferring said data to and from said storage, and upon receipt of an electrical signal from said microphone subsequent to having committed a learned voice print to memory storage, said microprocessor having capability for producing a test voice print representing the subsequent signal from a voice source, for retrieving said learned voice print from storage and determining whether a sufficient match exists between the learned voice print and the test voice print, and if so, for examining the programmed medication regime to determine whether to instruct the pump to discharge a dosage of said medication,
  - e) a source of electrical power for operating said microprocessor
2. The apparatus of claim 1 further comprising a switch operable by a patient for activating said microprocessor.
3. The apparatus of claim 1 further comprising a switch operable by a patient for switching closed a normally open electrical circuit connecting a source of electrical power to said microprocessor.

4. The apparatus of claim 1 in which said microprocessor is switchable to a learn position by a switch secured from access other than by an authorized operator, switching said switch to said learn position operating to erase any voice print in said data storage and enable said microprocessor to receive and analyze a said electrical signal to produce digital data representing a learned voice print.
5. The apparatus of claim 1 in which an annunciator is electrically connected to said microprocessor for announcing a condition of the microprocessor.
6. A module for connection with a patient controlled medication device to prevent unauthorized use of the device to medicate the patient, such device including a microprocessor programmable by an authorized operator to set and lock a dosage of medication regime for a patient, a reservoir for a fluid medication, and a pump operatively associated with said reservoir and operatively connected to said microprocessor for pumping fluid from said reservoir on command from said microprocessor, such module comprising:
  - a) a microphone for receiving voice sound from a voice source and converting it to an electrical signal representative of the voice pattern of the voice source,
  - b) a digital signal processor with associated digital memory storage and being electrically connectable to said microphone, said processor having capability for receiving and analyzing a connected said electrical signal from said microphone, to produce digital data representing a learned voice print of a voice source and for transferring said data to and from said storage, and upon receipt of an electrical signal from said microphone subsequent to having committed a learned voice print to memory storage, having capability for producing a voice print representing the subsequent signal from a voice source, for retrieving said learned and stored voice print and determining whether a match exists between the two voice prints, and if so, for issuing an electrical command to said microprocessor to examine the medical regime to determine whether to instruct the pump to discharge a dosage of said medication, and

- c) a source of power for operating said digital signal processor.
7. The apparatus of claim 1 further comprising a switch operable by a patient for activating said digital signal processor.
  8. The apparatus of claim 6 further comprising a switch operable by a patient for switching closed a normally open electrical circuit connecting a source of electrical power to said digital signal processor.
  9. The apparatus of claim 1 in which said digital signal processor is switchable to a learn position by a switch secured from access other than by an authorized operator, switching said switch to said learn position operating to erase any voice print in said data storage and enable said digital signal processor to receive and analyze a said electrical signal to produce digital data representing a learned voice print.
  10. The apparatus of claim 1 in which an annunciator is electrically connected to said digital signal processor for announcing a condition of the digital signal processor.
  11. A module for connection with a patient controlled medication device to prevent unauthorized use of the device to medicate the patient, such device including a microprocessor programmable by an authorized operator to set and lock a dosage of medication regime for a patient, a reservoir for a fluid medication, and a pump operatively associated with said reservoir and operatively connected to said microprocessor for pumping fluid from said reservoir on command from said microprocessor, such module comprising:
    - a) a microphone for receiving voice sound from a voice source and converting it to an electrical signal representative of the voice pattern of the voice source,
    - b) a digital signal processor with associated digital memory storage and being electrically connectable to said microphone, said processor having capability for receiving and analyzing a connected said electrical signal from said microphone, to produce digital data representing a learned voice

print of a voice source and for transferring said data to and from said storage, and upon receipt of an electrical signal from said microphone subsequent to having committed a learned voice print to memory storage, having capability for producing a voice print representing the subsequent signal from a voice source, for retrieving said learned and stored voice print and determining whether a match exists between the two voice prints, and if so, for issuing an electrical command to said microprocessor to examine the medical regime to determine whether to instruct the pump to discharge a dosage of said medication, said digital signal processor being switchable to a learn position by a switch secured from access other than by an authorized operator, switching said switch to said learn position operating to erase any voice print in said data storage and enable said digital signal processor to receive and analyze a said electrical signal to produce digital data representing a learned voice print,

- c) an annunciator electrically connected to said digital signal processor for announcing a condition of the digital signal processor,
- d) a source of power for operating said digital signal processor, and
- e) a switch operable by a patient for switching closed a normally open electrical circuit connecting a source of electrical power to said digital signal processor.

12. A method of dispensing a dosage of medication from a medication reservoir to a patient on voice command of the patient, comprising:

- a) setting and locking a prescribed medication regime containing limits dosage administration within a least one time period into a microprocessor capable of commanding a pump operatively connected to a reservoir of the medication to pump a single dose of the medication upon receipt of such command,
- b) fluidly connecting a medication delivery line from said pump into a patient,

- c) converting a voice sound from the patient into an electrical signal representing a first voice pattern,
- d) receiving and processing said voice pattern in said processor upon connection of said electrical signal to said processor, to analyze said first voice pattern and produce digital data representing a first voice print of the patient,
- e) transferring said data to digital memory storage associated with said processor,
- f) converting a subsequent voice sound from a voice source into a second electrical signal representing a second voice pattern,
- g) receiving and processing said second voice pattern in said processor to analyze said second voice pattern and produce digital data representing a second voice print,
- h) retrieving said data representing said first voice print from said storage,
- i) comparing said second voice print to said first voice print in said processor to determine whether the second voice print is a match for the first voice print, and if there is a match, commanding the pump to dispense a single dose of the medication if a limiting parameter of said medication regime is not exceeded.